

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

PLANO ENCRYPTION
TECHNOLOGIES, LLC,
Plaintiff,

v.

ALKAMI, INC., et al.,
Defendants.

§
§
§
§
§
§
§
§

CASE NO. 2:16-cv-1032-JRG
LEAD CASE

CLAIM CONSTRUCTION
MEMORANDUM OPINION AND ORDER

Before the Court is Plano Encryption Technologies, LLC’s (“Plaintiff’s”) Opening Mini-Markman Claim Construction Brief (Dkt. No. 139). Also before the Court are Defendants Alkami Technology, Inc., Best Buy Co., Inc., Etsy, Inc., J.C. Penney Corporation, Inc., and State Farm Mutual Automobile Insurance Company’s (collectively, “Defendants”)¹ Mini-Markman Responsive Claim Construction Brief (Dkt. No. 150) and Plaintiff’s Reply (Dkt. No. 156).

The Court held a narrowly targeted claim construction hearing, sometimes referred to as a “mini-*Markman*,” on August 15, 2017. (*See* Dkt. No. 128, June 19, 2017 Order; Dkt. No. 119, June 6, 2017 Order.)

¹ At the time of the August 15, 2017 hearing, Plaintiff had settled with Defendants Alkami Technology, Inc., Best Buy Co., Inc., and Etsy, Inc. (*See* Dkt. Nos. 153, 155 & 160.)

Table of Contents

I. BACKGROUND.....	3
II. LEGAL PRINCIPLES	4
III. AGREED TERMS.....	8
IV. DISPUTED TERMS.....	9
A. “including”	9
B. “response”	13
C. “a machine readable medium” and “a storage medium”	18
V. CONCLUSION.....	22

I. BACKGROUND

Plaintiff brings suit alleging infringement of United States Patent Nos. 5,974,550 (“the ’550 Patent”) and 5,991,399 (“the ’399 Patent”) (collectively, the “patents-in-suit”) (Dkt. No. 139, Exs. A–B).

The ’550 Patent, titled “Method for Strongly Authenticating Another Process in a Different Address Space,” issued on October 26, 1999, and bears a filing date of December 12, 1997. The Abstract of the ’550 Patent states:

Authenticating a remote process operating in an address space different than that of a local process includes the steps of creating, by the local process, a tamper resistant module containing a temporary secret, sending the tamper resistant module and a challenge from the local process to the remote process, executing the tamper resistant module by the remote process and recovering the secret when the integrity of the remote process is verified by the tamper resistant module, encoding the challenge using the secret to produce a response, sending the response to the local process, and decoding the response by the local process. Optionally, the tamper resistant module includes a request for information from the second process and the response includes the answer to the request for information.

The ’399 Patent, titled “Method for Securely Distributing a Conditional Use Private Key to a Trusted Entity on a Remote System,” issued on November 23, 1999, and bears a filing date of December 18, 1997. The Abstract of the ’399 Patent states:

Secure distribution of a private key to a user’s application program (also called a “trusted player” such as a DVD player or CD-ROM player) with conditional access based on verification of the trusted player’s integrity and authenticity is provided. Once validated, the trusted player uses the private key to decrypt encrypted digital content. The private key is dynamically generated, associated with specific digital content, and communicated in real-time from a server to the trusted player in a secure manner, thereby controlling access to encrypted digital content. The key is wrapped into an executable tamper resistant key module in which the key can only be used by the right trusted player as determined by the server based on user requests and payment. The key module plugs in to the trusted player and executes to validate the player and decrypt the content. The integrity of the trusted player is correlated to its ability to perform a cryptographic operation using an asymmetric key pair in a manner that is tamper resistant, thereby preventing an unencrypted copy of digital content to be made.

Plaintiff has asserted Claims 10, 11, 12 and 20 of the '550 Patent and Claims 1, 2, 9, 10, 11 and 34 of the '399 Patent. (Dkt. No. 139 at 6.)

The Court previously addressed the '399 Patent in *Plano Encryption Technologies, LLC v. American Bank of Texas, et al.*, No. 2:15-cv-1273, Dkt. No. 104 (E.D. Tex. July 22, 2016) (“*PET I*”).

II. LEGAL PRINCIPLES

It is understood that “[a] claim in a patent provides the metes and bounds of the right which the patent confers on the patentee to exclude others from making, using or selling the protected invention.” *Burke, Inc. v. Bruno Indep. Living Aids, Inc.*, 183 F.3d 1334, 1340 (Fed. Cir. 1999). Claim construction is an issue of law for the court to decide. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 970–71 (Fed. Cir. 1995) (en banc), *aff’d*, 517 U.S. 370 (1996).

“In some cases, however, the district court will need to look beyond the patent’s intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period.” *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015) (citation omitted). “In cases where those subsidiary facts are in dispute, courts will need to make subsidiary factual findings about that extrinsic evidence. These are the ‘evidentiary underpinnings’ of claim construction that we discussed in *Markman*, and this subsidiary factfinding must be reviewed for clear error on appeal.” *Id.* (citing *Markman v. Westview Instruments, Inc.*, 517 U.S. 370 (1996)).

To ascertain the meaning of claims, courts look to three primary sources: the claims, the specification, and the prosecution history. *Markman*, 52 F.3d at 979. The specification must contain a written description of the invention that enables one of ordinary skill in the art to make and use the invention. *Id.* A patent’s claims must be read in view of the specification, of which

they are a part. *Id.* For claim construction purposes, the description may act as a sort of dictionary, which explains the invention and may define terms used in the claims. *Id.* “One purpose for examining the specification is to determine if the patentee has limited the scope of the claims.” *Watts v. XL Sys., Inc.*, 232 F.3d 877, 882 (Fed. Cir. 2000).

Nonetheless, it is the function of the claims, not the specification, to set forth the limits of the patentee’s invention. Otherwise, there would be no need for claims. *SRI Int’l v. Matsushita Elec. Corp.*, 775 F.2d 1107, 1121 (Fed. Cir. 1985) (en banc). The patentee is free to be his own lexicographer, but any special definition given to a word must be clearly set forth in the specification. *Intellicall, Inc. v. Phonometrics, Inc.*, 952 F.2d 1384, 1388 (Fed. Cir. 1992). Although the specification may indicate that certain embodiments are preferred, particular embodiments appearing in the specification will not be read into the claims where the claim language is broader than the embodiments. *Electro Med. Sys., S.A. v. Cooper Life Sciences, Inc.*, 34 F.3d 1048, 1054 (Fed. Cir. 1994).

This Court’s claim construction analysis is substantially guided by the Federal Circuit’s decision in *Phillips v. AWH Corporation*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). In *Phillips*, the Circuit set forth several guideposts that courts should follow when construing claims. In particular, the Court reiterated that “the claims of a patent define the invention to which the patentee is entitled the right to exclude.” *Id.* at 1312 (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). To that end, the words used in a claim are generally given their ordinary and customary meaning. *Id.* The ordinary and customary meaning of a claim term “is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” *Id.* at 1313. This principle of patent law flows naturally from the

recognition that inventors are usually persons who are skilled in the field of the invention and that patents are addressed to, and intended to be read by, others skilled in the particular art. *Id.*

Despite the importance of claim terms, *Phillips* made clear that “the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification.” *Id.* Although the claims themselves may provide guidance as to the meaning of particular terms, those terms are part of “a fully integrated written instrument.” *Id.* at 1315 (quoting *Markman*, 52 F.3d at 978). Thus, the *Phillips* court emphasized the specification as being the primary basis for construing the claims. *Id.* at 1314–17. As the Supreme Court stated long ago, “in case of doubt or ambiguity it is proper in all cases to refer back to the descriptive portions of the specification to aid in solving the doubt or in ascertaining the true intent and meaning of the language employed in the claims.” *Bates v. Coe*, 98 U.S. 31, 38 (1878). In addressing the role of the specification, the *Phillips* court quoted with approval its earlier observations from *Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998):

Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim. The construction that stays true to the claim language and most naturally aligns with the patent’s description of the invention will be, in the end, the correct construction.

Phillips, 415 F.3d at 1316. Consequently, *Phillips* emphasized the important role the specification plays in the claim construction process.

The prosecution history also continues to play an important role in claim interpretation. Like the specification, the prosecution history helps to demonstrate how the inventor and the United States Patent and Trademark Office (“PTO”) understood the patent. *Id.* at 1317. Because

the file history, however, “represents an ongoing negotiation between the PTO and the applicant,” it may lack the clarity of the specification and thus be less useful in claim construction proceedings. *Id.* Nevertheless, the prosecution history is intrinsic evidence that is relevant to the determination of how the inventor understood the invention and whether the inventor limited the invention during prosecution by narrowing the scope of the claims. *Id.* See also *Microsoft Corp. v. Multi-Tech Sys., Inc.*, 357 F.3d 1340, 1350 (Fed. Cir. 2004) (noting that “a patentee’s statements during prosecution, whether relied on by the examiner or not, are relevant to claim interpretation”).

Phillips rejected any claim construction approach that sacrificed the intrinsic record in favor of extrinsic evidence, such as dictionary definitions or expert testimony. The en banc Court condemned the suggestion made by *Texas Digital Systems, Inc. v. Telegenix, Inc.*, 308 F.3d 1193 (Fed. Cir. 2002), that a court should discern the ordinary meaning of the claim terms through dictionaries or otherwise before resorting to the specification for certain limited purposes. *Phillips*, 415 F.3d at 1319–24. According to *Phillips*, reliance on dictionary definitions at the expense of the specification has the effect of “focus[ing] the inquiry on the abstract meaning of words rather than on the meaning of claim terms within the context of the patent.” *Id.* at 1321. *Phillips* emphasized that the patent system is based on the proposition that the claims cover only the invented subject matter. *Id.*

Phillips does not preclude all uses of dictionaries in claim construction proceedings. Instead, the *Phillips* Court assigned dictionaries a role subordinate to the intrinsic record. In doing so, the Circuit emphasized that claim construction issues are not resolved by any magic formula. The Court did not impose any particular sequence of steps for a court to follow when it considers disputed claim language. *Id.* at 1323–25. Rather, *Phillips* held that a court must attach

the appropriate weight to the intrinsic sources offered in support of a proposed claim construction, bearing in mind the general rule that the claims measure the scope of the patent grant.

In general, prior claim construction proceedings involving the same patents-in-suit are “entitled to reasoned deference under the broad principals of *stare decisis* and the goals articulated by the Supreme Court in *Markman*, even though *stare decisis* may not be applicable *per se*.” *Maurice Mitchell Innovations, LP v. Intel Corp.*, No. 2:04-cv-450, 2006 WL 1751779, at *4 (E.D. Tex. June 21, 2006) (Davis, J.). See *TQP Development, LLC v. Intuit Inc.*, No. 2:12-cv-180, 2014 WL 2810016, at *6 (E.D. Tex. June 20, 2014) (Bryson, J.) (“[P]revious claim constructions in cases involving the same patent are entitled to substantial weight, and the Court has determined that it will not depart from those constructions absent a strong reason for doing so.”). See also *Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 839–40 (2015) (“[P]rior cases will sometimes be binding because of issue preclusion and sometimes will serve as persuasive authority”) (citation omitted); *Finisar Corp. v. DirecTV Grp., Inc.*, 523 F.3d 1323, 1329 (Fed. Cir. 2008) (noting “the importance of uniformity in the treatment of a given patent” (quoting *Markman*, 517 U.S. at 390)).

III. AGREED TERMS

The Parties have agreed that the term “key pair” means: “One or more asymmetric key pairs, one of the asymmetric key pairs having the claimed public key and claimed private key, the asymmetric keys of an asymmetric key pair being complementary by performing complementary functions, such as encrypting and decrypting data or creating and verifying signatures.” (Dkt. No. 133, at 1.)

IV. DISPUTED TERMS

A. “including”

Plaintiff’s Proposed Construction	Defendants’ Proposed Construction
Including / Ordinary Meaning	Containing and “including” modifies “executable tamper resistant key module”

(Dkt. No. 133 at Ex. A; Dkt. No. 139 at 8; Dkt. No. 150 at 2 & 24; Dkt. No. 156 at 1; Dkt. No. 158, Ex. A at 1.) Plaintiff submits that this disputed term appears in Claims 1 and 34 of the ’399 Patent. (Dkt. No. 139 at 6.)

(1) The Parties’ Positions

Plaintiff argues that “Defendants’ construction, here as it was before, is inconsistent with Federal Circuit precedent as the Federal Circuit has held that ‘including’ is synonymous with ‘comprising,’ and should be given a broad construction.” (Dkt. No. 139 at 8.)

Defendants respond that “[t]he plain and ordinary meaning of the claim language, confirmed by the specification, requires the module to *contain* the key and other data, and, as a matter of grammar, ‘including’ modifies ‘executable tamper resistant key module.’” (Dkt. No. 150 at 2.)

Plaintiff replies that “[t]he primary difference between ‘including’ and ‘containing’ is that the latter has the connotation of a ‘container’ while ‘including’ does not.” (Dkt. No. 156 at 2.) Plaintiff also submits that “the notion that the ‘tamper resistant module’ needs to operate as a ‘container’ was previously rejected by this Court” (*Id.*)

At the August 15, 2017 hearing, both sides presented oral argument. Plaintiff further elaborated upon its argument that Defendants’ proposal of “containing” implies “contained within,” which Plaintiff argued is clearly narrower than merely “including.”

(2) Analysis

Claim 1 of the ’399 Patent, for example, recites (emphasis added):

1. A method of securely distributing data comprising:
generating an asymmetric key pair having a public key and a private key;
encrypting predetermined data with the generated public key; and
building an executable tamper resistant key module identified for a selected program, the executable tamper resistant key module *including* the generated private key and the encrypted predetermined data.

As a threshold matter, the doctrine of the last antecedent² supports finding that the language beginning with “including” modifies “the executable tamper resistant key module.” The remaining dispute, then, is whether the term “including” is limited to “containing” or instead is akin to “comprising.”

In *PET I*, the Court addressed a dispute as to whether “including” requires compiling:

As to what it means to “include” a key and data in a tamper resistant module, Defendants point to an embodiment in the specification in which a key compiler is used to turn the key into a piece of executing code that may be included in the module. (Dkt. No. 86 at 16–17 (citing ’399 Patent 5:44–56).) The term in question [(“including the generated private key and the encrypted predetermined data”)], though, is much broader, merely requiring “including.”

PET I at 34–35. The Court “reject[ed] [the defendants’ proposal] of limiting ‘including’ to compiling” and found that no further construction was necessary. *Id.* at 36.

² The “doctrine of the last antecedent” is that “[r]eferential and qualifying words and phrases, where no contrary intention appears, refer solely to the last antecedent, which consists of the last word, phrase, or clause that can be made an antecedent without impairing the meaning of the sentence for purposes of statutory construction.” *Finisar*, 523 F.3d at 1336 (emphasis omitted; internal citations and quotation marks omitted) (finding that this doctrine of statutory construction was useful in the context of determining the meaning of a prior art reference).

At least one authority holds that “[t]he claim term ‘including’ is synonymous with ‘comprising,’ thereby permitting the inclusion of unnamed components.” *Hewlett-Packard Co. v. Repeat-O-Type Stencil Mfg. Corp.*, 123 F.3d 1445, 1451 (Fed. Cir. 1997). Although Defendants have cited *Hewlett-Packard* as support for interpreting “including” as meaning “containing,” no such construction is apparent in *Hewlett-Packard*. *See id.* Specifically, *Hewlett-Packard* used the word “contain” when addressing what the claim at issue “reads on,” but *Hewlett-Packard* did not expressly construe “including” to mean “containing.” *See id.*

Also, the Court has previously found as to the ’399 Patent that “the ’899 Patent, explicitly incorporated by reference into the ’399 Patent, teaches that the tamper resistant modules can be partitioned in time and space into sub-programs.” *PET I* at 26 (discussing U.S. Patent No. 5,892,899 (“the ’899 Patent”); citing ’899 Patent at 1:35–42, 3:48–4:20 & Fig. 1). *See also* ’899 Patent at 1:65–67 (“distributing the secret private key in time as well as in space”). These disclosures that the modules can be “partitioned” and “distribut[ed]” weigh at least somewhat against Defendants’ proposal of “containing,” which might be read as requiring a single container.

Defendants here have also cited the Abstract of the ’399 Patent, which states that “[t]he key is wrapped into an executable tamper resistant key module,” but this is a specific feature of particular disclosed embodiments that should not be imported into the claims. *See Phillips*, 415 F.3d at 1323. *See also id.* at 7:47–58, 8:32–46 & 8:61–9:16. Further, other portions of the specification are consistent with a broad interpretation of “including.” *See* ’399 Patent at 6:42–45 (“Trusted player 42 *includes* executable software 44, which is the code image of the trusted player as loaded into the memory of client 32. Also *included* in the trusted player is a signed manifest 46.” (emphasis added)). *See also id.* at 6:50–60.

Finally, Defendants have cited extrinsic dictionary definitions of “include” that refer to “containing.” (Dkt. No. 150, Ex. 10, *Webster’s Ninth New Collegiate Dictionary* 609 (1988) (“3 : to contain between or within”; “INCLUDE suggests the containment of something as a constituent, component, or subordinate part of a larger whole”); Dkt. No. 150, Ex. 11, *The American Heritage Dictionary of the English Language* 913 (3d ed. 1992) (“2. To contain as a secondary or subordinate element.”).) On balance, however, this extrinsic evidence does not justify limiting “including” to meaning “containing.” *See Phillips*, 415 F.3d at 1321 (“[H]eavy reliance on the dictionary divorced from the intrinsic evidence risks transforming the meaning of the claim term to the artisan into the meaning of the term in the abstract, out of its particular context, which is the specification.”).

The Court therefore expressly rejects Defendants’ proposal that “including” means “containing.” No further construction is necessary apart from the finding, set forth above, that the language beginning with “including” modifies “the executable tamper resistant key module.” *See U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997) (“Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement. It is not an obligatory exercise in redundancy.”). *See also O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008) (“[D]istrict courts are not (and should not be) required to construe every limitation present in a patent’s asserted claims.”); *Finjan, Inc. v. Secure Computing Corp.*, 626 F.3d 1197, 1207 (Fed. Cir. 2010) (“Unlike *O2 Micro*, where the court failed to resolve the parties’ quarrel, the district court rejected Defendants’ construction.”); *ActiveVideo Networks, Inc. v. Verizon Commcn’s, Inc.*, 694 F.3d

1312, 1326 (Fed. Cir. 2012); *Summit 6, LLC v. Samsung Elecs. Co.*, 802 F.3d 1283, 1291 (Fed. Cir. 2015).

The Court therefore construes “**including**” to have its **plain meaning** apart from finding that the language beginning with “including” modifies “the executable tamper resistant key module.”

B. “response”

Plaintiff’s Proposed Construction	Defendants’ Proposed Construction
Response / Ordinary Meaning	“challenge encoded with the secret” ³

(Dkt. No. 133 at Ex. A; Dkt. No. 139 at 11; Dkt. No. 150 at 18, 18 n.6 & 24; Dkt. No. 156 at 5; Dkt. No. 158, Ex. A at 3.) Plaintiff submits that this disputed term appears in Claims 10 and 20 of the ’550 Patent. (Dkt. No. 139 at 6–7.)

(1) The Parties’ Positions

Plaintiff argues that “[o]ne of ordinary skill in the art would not read the patent and prosecution history to try and read limitations into ‘response,’ which are not present in the asserted claims, just as the Court did not in its previous construction [of ‘challenge’ in *PET I*].” (Dkt. No. 139 at 12.)

Defendants respond that their proposed interpretation “is supported by the ’550 Patent claims and specification, and is expressly required in view of disclaimers made by the ’550

³ Defendants previously proposed: “The challenge (and any information requested by the second process) encoded with the secret only after integrity verification has been performed on the first process (Claim 10)”; and “The challenge (and any information requested by the processor) encoded with the secret only after integrity verification has been performed on the remote process (Claim 20).” (Dkt. No. 133, Ex. A.) This prior proposal also appears in the parties’ July 26, 2017 Joint Claim Construction Chart (Dkt. No. 158, Ex. A at 3–4). However, Defendants specifically stated in their responsive claim construction brief that they “have amended their proposed construction,” and Defendants asserted that “[t]his shortened version simplifies the proposed construction while still resolving the parties’ dispute and remaining true to the intrinsic record.” (Dkt. No. 150 at 18 n.6.)

Patent applicant during examination.” (Dkt. No. 150 at 18.) Defendants explain that “[l]ogically, if the ‘response’ is not encoded, there is nothing to decode,” and “the claims require that the ‘response’ be ‘a response to the challenge.’” (*Id.* at 19.) Defendants also urge that “[t]he ’550 Patent applicant clearly narrowed the definition of ‘response’ so that a *process* may be authenticated via encoding the challenge with the secret, rather than merely authenticating a human *user* via stored information.” (*Id.* at 22.) Finally, Defendants submit that “[t]he Court’s prior construction of ‘challenge’ does not conflict with ‘response’ construed as ‘challenge encoded with the secret.’” (*Id.* at 23.)

Plaintiff replies that “the statements cited by Defendants from the prosecution history are pulled out of context,” and “there is certainly ambiguity in whether the patentees’ statements were intended as a disclaimer at all, or were merely describing the features present in a subset of the claims.” (Dkt. No. 156 at 7.)

At the August 15, 2017 hearing, both sides presented oral argument. Plaintiff reiterated its argument that the prosecution history is ambiguous as to whether the statements cited by Defendants referred to Claims 10 and 20, particularly because the limitation proposed by Defendants appears in other claims. Defendants responded that the prosecution history at issue applied to all claims, including the claims that issued as Claims 10 and 20, and that the claimed authentication works only if the secret is obtained.

(2) Analysis

The Parties have noted that the Court previously construed “challenge” to mean “prompt for information for use in authentication.” *PET I* at 67.

Claim 10 of the ’550 Patent, for example, recites (emphasis added):

10. An apparatus for authenticating a first process operating in an address space different than that of a second process comprising:

a processing unit for executing programming instructions; and
a storage medium having stored therein a plurality of programming instructions of the second process to be executed by the processing unit, wherein when executed, the plurality of programming instructions create a tamper resistant module containing a secret, create a challenge, send the tamper resistant module and the challenge to the first process, receive a *response* to the challenge from the first process, and decode the *response*.

This claim recites “decode the response,” which implies that the response has been encoded. Yet, the limitation proposed by Defendants, that the “response” must be the “challenge encoded with the secret,” is not expressly set forth in the claim, and no clear implication to such effect is apparent in the claim. Further, as discussed in *PET I*, the Background of the Invention states that “challenge-response protocols” may involve merely a shared secret. *See PET I* at 65. *See also* ’550 Patent at 1:12–29.

The specification contains disclosure that is consistent with Defendants’ proposed interpretation:

If the tamper resistant module runs properly and Process B’s current image in memory is successfully verified according to the signed manifest of Process B’s image 17, then Process B recovers the secret and *uses the secret to encode the provided challenge* to produce the appropriate response. Thus, response 20 includes an encrypted challenge E(challenge) 22. The response is sent back to Process A. Process A, already knowing the secret, decrypts the encrypted challenge.

Id. at 3:41–49 (emphasis added).

On balance, however, this use of a secret to encode a challenge is a specific feature of particular disclosed embodiments that should not be imported from the specification into the seemingly generic term “response.” *See id.*; *Phillips*, 415 F.3d at 1323.

Also, the limitation proposed by Defendants appears in other claims. *See* ’550 Patent at Cl. 14 (“encode the challenge using the secret to produce a response”); ’550 Patent at Cls. 19 &

21–23 (similar). *See also Phillips*, 415 F.3d at 1314 (“Differences among claims can be a useful guide in understanding the meaning of particular claim terms.”).

Nonetheless, the prosecution history supports Defendants’ proposed construction. During prosecution of the ’550 Patent, the examiner rejected all of the pending claims, and the patentee responded by amending claims and by presenting arguments. (*See* Dkt. No. 150, Ex. 12, May 14, 1999 Office Action at 2 (FH0176); *see also id.*, June 17, 1999 Amendment and Response (FH0191–200).) The application claims 10 and 20 pending at that time, as amended by that amendment, issued as Claims 10 and 20. (*See id.* at 2 & 4 (FH0192 & FH0194).) In responding to a rejection as to all pending claims, the patentee stated as follows regarding the “Penzias” reference, U.S. Patent No. 5,311,594:

Penzias discloses a simple variation on a well known challenge/response protocol whereby a human requester must supply a selected one of several previously provided and stored pieces of information in order to participate in a credit card transaction. This method provides some minimal level of protection by purportedly authenticating a human user to prevent theft of telephone service. However, the pre-stored information may be acquired by a thief just as a “PIN” number can be. Penzias does not teach or disclose a remote process, executing in an address space different than a local process, being authenticated and having its integrity verified as presently claimed. *Penzias does not teach or suggest using the challenge in the challenge/response protocol as the response and encoding it with a secret (key) obtained from a tamper resistant module only after integrity verification has been performed on the remote process, as is required by the limitations of the present claims.*

Neither Berry [(United States Patent No. 4,964,163)] nor Penzias, nor Official Notice, alone or in combination, teach or suggest the invention as presently claimed, including all of the recited limitations. Neither Berry nor Penzias, nor Official Notice, teach or suggest authentication, integrity verification, or the use of a tamper resistant module to deliver a secret to a remote process. *Neither Berry nor Penzias teach or suggest that a key used to encode a response to a challenge may be embedded within a tamper resistant module, and that the key is accesible [sic] only after integrity verification of the remote process is performed. Furthermore [sic], neither Berry nor Penzias teach that such an authentication procedure may be implemented in a bilateral fashion. The present claims have been amended to more particularly point out these novel and nonobvious features*

of the present invention. Based on the foregoing, the claims are allowable as currently presented.

(*Id.* at 8–9 (FH0198–99) (emphasis added).)

Plaintiff has argued that the patentee distinguished the prior art references based on amendments adding “tamper resistant” to the claims, and Plaintiff urges that “[t]he patentee then made various statements which clearly only applied to some of the claims, and not to all of the claims.” (Dkt. No. 156 at 7.) Despite Plaintiff’s arguments, no relevant ambiguity is apparent in the above-reproduced statements by the patentee, even when viewed in the context of the entire Amendment and Response. *See Andersen Corp. v. Fiber Composites, LLC*, 474 F.3d 1361, 1374 (Fed. Cir. 2007) (“An applicant’s invocation of multiple grounds for distinguishing a prior art reference does not immunize each of them from being used to construe the claim language. Rather, as we have made clear, an applicant’s argument that a prior art reference is distinguishable on a particular ground can serve as a disclaimer of claim scope even if the applicant distinguishes the reference on other grounds as well.”). Plaintiff has also cited *Massachusetts Institute of Technology v. Shire Pharmaceuticals, Inc.*, 839 F.3d 1111, 1120–21 (Fed. Cir. 2016), but in that case the applicant proposed an amendment that the examiner rejected as new matter. The circumstances of *MIT* are therefore distinguishable from the above-reproduced definitive statements made in the present case.

On balance, the patentee definitively stated that all of the pending claims, including the claims that issued as Claims 10 and 20, require “using the challenge . . . as the response and encoding it with a secret (key) obtained from a tamper resistant module,” as set forth above. The term “response” should therefore be construed so as to give effect to these definitive statements by the patentee. *See, e.g., Omega Eng’g v. Raytek Corp.*, 334 F.3d 1314, 1324 (Fed. Cir. 2003) (“As a basic principle of claim interpretation, prosecution disclaimer promotes the public notice

function of the intrinsic evidence and protects the public’s reliance on definitive statements made during prosecution.”); *Typhoon Touch Techs., Inc. v. Dell, Inc.*, 659 F.3d 1376, 1381 (Fed. Cir. 2011) (“The patentee is bound by representations made and actions that were taken in order to obtain the patent.”); *Fenner Invest., Ltd. v. Cellco P’ship*, 778 F.3d 1320, 1327 (Fed. Cir. 2015) (“Although claim differentiation is a useful analytic tool, it cannot enlarge the meaning of a claim beyond that which is supported by the patent documents, or relieve any claim of limitations imposed by the prosecution history.”) (citations omitted).

The Court therefore construes **“response”** to mean **“challenge encoded with the secret.”**

C. “a machine readable medium” and “a storage medium”

Plaintiff’s Proposed Construction	Defendants’ Proposed Construction
One or more media / Ordinary Meaning	“one or more media, one medium storing all of the claimed instructions”

(Dkt. No. 133, Ex. A; Dkt. No. 139 at 13; Dkt. No. 150 at 10; *see id.* at 24; Dkt. No. 156 at 8; Dkt. No. 158, Ex. A at 2.) Plaintiff submits that these disputed terms appear in Claims 10 and 20 of the ’550 Patent. (Dkt. No. 139 at 6–7.)

(1) The Parties’ Positions

Plaintiff argues that “[w]hile the parties have agreed that because of the unique claim language of ‘key pair,’ that term is an exception to the rule, there is no reason to read a limitation that all of the instructions have to be on a single ‘medium’ in the claims.” (Dkt. No. 139 at 13.)

Defendants respond that “the single set of claimed instructions are all of a *single specific operating process*, the second process,” and “this second process is operating on a single machine that may or may not be the same machine as the one in which the first process is operating.” (Dkt. No. 150 at 10.) Defendants argue that “[t]he ’550 Patent claim language makes

clear that the asserted claims are directed to the arrangement of one medium storing all of the claimed instructions, even if other media are present in the system.” (*Id.* at 11.) Further, Defendants argue that “[Plaintiff’s] construction finds no support in the claim language or the specification.” (*Id.* at 17.)

Plaintiff replies that “the ‘one or more’ construction is a bedrock rule of patent law, with very limited exceptions, none present in this case.” (Dkt. No. 156 at 8.) Plaintiff also argues that “the ’550 specification explicitly teaches multiple media may be used for storing instructions.” (*Id.* at 9.)

At the August 15, 2017 hearing, both sides presented oral argument.

(2) Analysis

Claims 10 and 20 of the ’550 Patent recite (emphasis added):

10. An apparatus for authenticating a first process operating in an address space different than that of a second process comprising:

a processing unit for executing programming instructions; and

a *storage medium* having stored therein a plurality of programming instructions of the second process to be executed by the processing unit, wherein when executed, the plurality of programming instructions create a tamper resistant module containing a secret, create a challenge, send the tamper resistant module and the challenge to the first process, receive a response to the challenge from the first process, and decode the response.

* * *

20. A *machine readable medium* having stored therein a plurality of machine readable instructions designed to be executed by a processor, the machine readable instructions for creating a tamper resistant module containing a secret, creating a challenge, sending the tamper resistant module and the challenge to a remote process, receiving a response to the challenge from the remote process, and decoding the response.

As Plaintiff has argued, “[a]s a general rule, the words ‘a’ or ‘an’ in a patent claim carry the meaning of ‘one or more.’” *TiVo, Inc. v. EchoStar Commc’ns Corp.*, 516 F.3d 1290, 1303 (Fed. Cir. 2008) (citation omitted). *Accord KCJ Corp. v. Kinetic Concepts, Inc.*, 223 F.3d 1351,

1356 (Fed. Cir. 2000) (“This court has repeatedly emphasized that an indefinite article ‘a’ or ‘an’ in patent parlance carries the meaning of ‘one or more’ in open-ended claims containing the transitional phrase ‘comprising.’”); *WundaFormer, LLC v. Flex Studios, Inc.*, No. 2016-1301, 2017 WL 631751, at *4 (Fed. Cir. Feb. 16, 2017) (“The term ‘comprising’ indicates the claim is open-ended and does not exclude additional, unrecited elements. The indefinite article ‘a’ is interpreted to carry the meaning of ‘one or more.’” (citations omitted)).

Here, however, each claim recites a particular medium and then recites limitations as to instructions that are stored on the medium and that are to be executed by a processor. Thus, one particular medium must store all of these instructions. The case of *In re Varma* is analogous in this regard:

[H]ere the question is not whether there can be more than one request in a claim-covered system: there can. Rather, the question is whether “a” can serve to negate what is required by the language following “a”: a “request” (a singular term) that “correspond[s]” to “two or more selected investments.” It cannot. For a dog owner to have “a dog that rolls over and fetches sticks,” it does not suffice that he have two dogs, each able to perform just one of the tasks. In the present case, no matter how many requests there may be, no matter the variety of the requests the system may receive, the system must be adapted to receive a request that itself corresponds to at least two investments.

In re Varma, 816 F.3d 1352, 1362–63 (Fed. Cir. 2016) (footnote omitted). *Accord Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1342 (Fed. Cir. 2016) (regarding “a logical table,” finding that the limitations at issue were required to be “in the same logical table”); *East Coast Sheet Metal Fabricating Corp. v. Autodesk, Inc.*, No. 12-cv-517-LM, 2015 WL 226084, at *13 (D.N.H. Jan. 15, 2015), *amended by* 2015 WL 925614 (Mar. 3, 2015) (“[B]ecause each claim recites a single computer-readable medium, each claim necessarily requires that *all* of its steps are performed by that single computer-readable medium.”). At the August 15, 2017 hearing, Plaintiff attempted to distinguish *In re Varma*, as well as *Enfish*, based on particular disclosures in the

specifications in those cases, but Plaintiff has failed to demonstrate that the above-cited legal principle does not apply in the present case.

This remains true even though, as the specification discloses and as the Court noted in *PET I*, the first process and the second process may each arise from more than one computer program and may be on different computer systems. *See PET I* at 56 & 59. *See also* '550 Patent at 2:18–20, 4:61–5:3 & 5:22–28. Indeed, the specification discloses processes executing on particular computer systems but does not disclose a single process executing across multiple computer systems. *Id.* at 4:61–5:3. *See id.* at 5:14–21 (“These elements perform their convention [sic, conventional] functions well known in the art.”). Although Plaintiff has cited the disclosure of multiple computer memories in Figure 3, this illustration of “Cache Memory,” “Main Memory,” “Video Memory,” and “Mass Storage” is not inconsistent with the recital in the claims of a particular medium that must satisfy the recited limitations. Further, the evidence submitted by Defendants as to the meanings of “cache,” “main memory,” “primary storage,” and “video memory,” although extrinsic and therefore of somewhat limited weight here, provides additional support for Defendants’ interpretation of the disputed terms. (*See* Dkt. No. 150, Ex. 1, *Microsoft Computer Dictionary* 81, 326, 419, 552 (5th ed. 2002); Dkt. No. 150, Ex. 2, *Random House Webster’s Computer & Internet Dictionary* 332 (1999).)

Finally, the Court discussed and applied the above-cited *Enfish* and *In re Varma* authorities as to an analogous dispute regarding the term “an asymmetric key pair” in *PET I*. *See PET I* at 12–15.

Based on all of the foregoing, the Court hereby construes the disputed terms as set forth in the following chart:


<u>Term</u>	<u>Construction</u>
“a storage medium”	“one or more storage media, at least one of which stores all of the recited instructions”
“a machine readable medium”	“one or more machine readable media, at least one of which stores all of the recited instructions”

V. CONCLUSION

The Court adopts the constructions set forth in this opinion for the disputed terms of the patents-in-suit, and in reaching these conclusions, the Court has considered and relied upon extrinsic evidence. The Court’s constructions thus include subsidiary findings of fact based upon the extrinsic evidence presented by the Parties in these claim construction proceedings. *See Teva*, 135 S. Ct. at 841.

The Parties are ordered that they may not refer, directly or indirectly, to each other’s claim construction positions in the presence of the jury. Likewise, the Parties are ordered to refrain from mentioning any portion of this Opinion, other than the actual definitions adopted by the Court, in the presence of the jury. Any reference to claim construction proceedings is limited to informing the jury of the definitions adopted by the Court.

So ORDERED and SIGNED this 23rd day of August, 2017.


 RODNEY GILSTRAP
 UNITED STATES DISTRICT JUDGE